

CLAIMS:

1. A wireless communications network for communicating with a mobile terminal; comprising:

a number of repeater points having overlapping coverage areas and each comprising transceivers for communicating wirelessly with the mobile terminal;

an access point comprising transceivers for communicating with the repeater points;

the repeater points further comprising means for relaying signals between the terminal and the access point;

signal quality measurement apparatus for determining a quality measure of signals sent by the terminal and received by the access point via the repeater points;

a selector for selecting one or more repeater points to relay transmission signals from the access point to the terminal, said selection based on said quality measures of the terminal signals received by the access point.

2. A network according to claim 1 wherein the access point transceiver comprise a wireless link between said access point and a said repeater point and having directional antennas.

3. A network according to claim 1 wherein the access point transceiver comprise a cable link between said access point and a said repeater point.

4. A network according to claim 1 wherein the selector selects one or more repeater points having a received signal quality measure above a predetermined threshold, said threshold corresponding to a line of sight signal path between the terminal and the access point via one or more repeater points.

5. A network according to claim 1 wherein the access point further comprises a transceiver for communicating directly with the mobile terminal and wherein the selector is further arranged to select between said repeater points and the direct access point communication transceiver for transmitting to said terminal.

6. A network according to claim 1 wherein the signal quality measure of a terminal signal received via a repeater point is based on a predetermined quality of each combined wireless link between a said repeater point and the terminal and that said repeater point and the access point.
7. A network according to claim 1 wherein the signal quality measure of a terminal signal received via a repeater point is based on a predetermined quality of said received signals.
8. A network according to claim 2 and arranged such that the access point has a line of sight (LOS) path to each repeater point and wherein the access point and the repeater points each comprises directional antennas.
9. A network according to claim 1 wherein the access and repeater points are located to form a pyramid in 3D space.
10. An access point for a wireless communications network comprising a number of repeaters for communicating with a mobile terminal; comprising:
 - transceivers for communicating with the repeaters;
 - signal quality measurement apparatus for determining a quality measure of signals sent by the terminal and received by the access point via the repeater points;
 - a selector for selecting one or more repeater points to relay transmission signals from the access point to the terminal, said selection based on said quality measures of the terminal signals received by the access point.
11. An access point according to claim 10 wherein the selector selects one or more repeater points having a received signal quality measure above a predetermined threshold, said threshold corresponding to a line of sight signal path between the terminal and the access point via one or more repeater points.
12. An access point according to claim 10 further comprising a transceiver for communicating directly with the mobile terminal and wherein the selector is further

arranged to select between said repeater points and the direct access point transceiver for transmitting to said terminal.

13. An access point according to claim 10 wherein the signal quality measure of a terminal signal received via a repeater point is based on a predetermined quality of each combined wireless link between a said repeater point and the terminal and that said repeater point and the access point.

14. An access point according to claim 10 wherein the signal quality measure of a terminal signal received via a repeater point is based on a predetermined quality of said received signals.

15. An access point according to claim 10 further comprising directional antennas directed in use to said repeater points.

16. A repeater point for a wireless communications network comprising an access point and a number of repeater points for communicating with a mobile terminal; comprising:

a transceiver for communicating with the mobile terminal and a transceiver for communicating with the access point in order to relay signals between said terminal and said access point;

and a signal quality measurement apparatus for determining a quality measure of signals sent by the terminal and received by the repeater point, and arranged to forward said quality measure to said access point.